Foreword

How Forecasts Are Made

Most of the annual streamflow in the Western United States originates as snowfall. This snowfall accumulates high in the mountains during winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Predictions are based on careful measurements of snow water equivalent at selected index points. Precipitation, temperature, soil moisture and antecedent streamflow data are viewed in conjunction with snowpack data to prepare runoff forecasts. This report presents a comprehensive picture of water supply outlook conditions for areas dependent upon surface runoff. It includes selected streamflow forecasts, summarized snowpack and precipitation data, reservoir storage data and narratives describing current conditions.

Streamflow forecasts are cooperatively generated by Soil Conservation Service and National Weather Service hydrologists. Forecasts become more accurate as more data affecting runoff becomes known. For this reason, forecasts are issued that reflect three future precipitation conditions — Below Normal, Average, and Above Normal. These forecasts are termed reasonable minimum, most probable, and reasonable maximum. Actual streamflow can be expected to fall between the lower and upper forecast values eight out of ten years.

Snowpack data are obtained by using a combination of manual and automated measurement methods. Manual readings of snow depth and water equivalent are taken at locations called snow courses on a monthly or semi-monthly schedule during the winter. In addition, snow water equivalent, precipitation, temperature, and other parameters are monitored on a daily basis and transmitted via radio telemetry to central data collection facilities. Both monthly and daily data are used to project snowmelt runoff.

For More Information

Copies of Monthly Water Supply Outlook Reports and other reports may be obtained from the states listed below. Because of the limited space, snow survey measurements are not published in monthly reports. An annual snow survey data summary is published by the Soil Conservation Service for each of the western states. Historical snow survey data may be obtained at those same offices.

STATE	ADDRESS
Alaska	201 East 9th Ave., Suite 300, Anchorage, AK 99501-3687
Arizona	201 East Indianola, Suite 200, Phoenix, AZ 85012
Colorado (New Mexico)	2490 West 26th Ave., Denver, CO 80211
Idaho	304 North 8th Street, Room 345, Boise, ID 83702
Montana	10 East Babcock, Room 443, Federal Building, Bozeman, MT 59715
Nevada	50 South Virginia Street, Third Floor, Reno, NV 89505
Oregon	1220 Southwest 3rd Ave., 16th Floor, Portland, OR 97204
Utah	4402 Federal Building, 125 South State Street, Salt Lake City, UT 84147
Washington	360 U.S. Court House, Spokane, WA 99201
Wyoming	Federal Building, 100 East "B" Street, Casper, WY 82602

In addition to state reports, a Water Supply Outlook for the Western United States is published by the Soil Conservation Service and National Weather Service monthly, January through May. Reports may be obtained from the Soil Conservation Service, West National Technical Center, 511 Northwest Broadway, Room 547, Portland, OR 97209.

Published by other agencies:

Water Supply Outlook Reports prepared by other agencies include: California — Snow Survey Branch, California Department of Water Resources, P.O. Box 388, Sacramento, CA 98502; British Columbia — The Ministry of Environment, Water Investigations Branch, Parliament Buildings, Victoria, British Columbia, V8V 1X5; Yukon Territory — Department of Indian and Northern Affairs, Northern Operations Branch, 200 Range Road, Whitehorse, Yukon Territory, Y1A 3V1; Alberta, Saskatchewan, and N.W.T. — The Water Survey of Canada, Inland Waters Branch, 110-12 Avenue S.W., Calgary, Alberta, T3C 1A6.

Washington
Water Supply Outlook

and

Federal — State — Private
Cooperative Snow Surveys

Issued by

Wilson Scaling
Chief
Soil Conservation Service
Washington, D.C.

Released by

Lynn A. Brown
State Conservationist
Soil Conservation Service
Spokane, Washington

Prepared by

William F. Weller
Water Supply Specialist
Room 360 U.S. Courthouse
Spokane, Washington 99201

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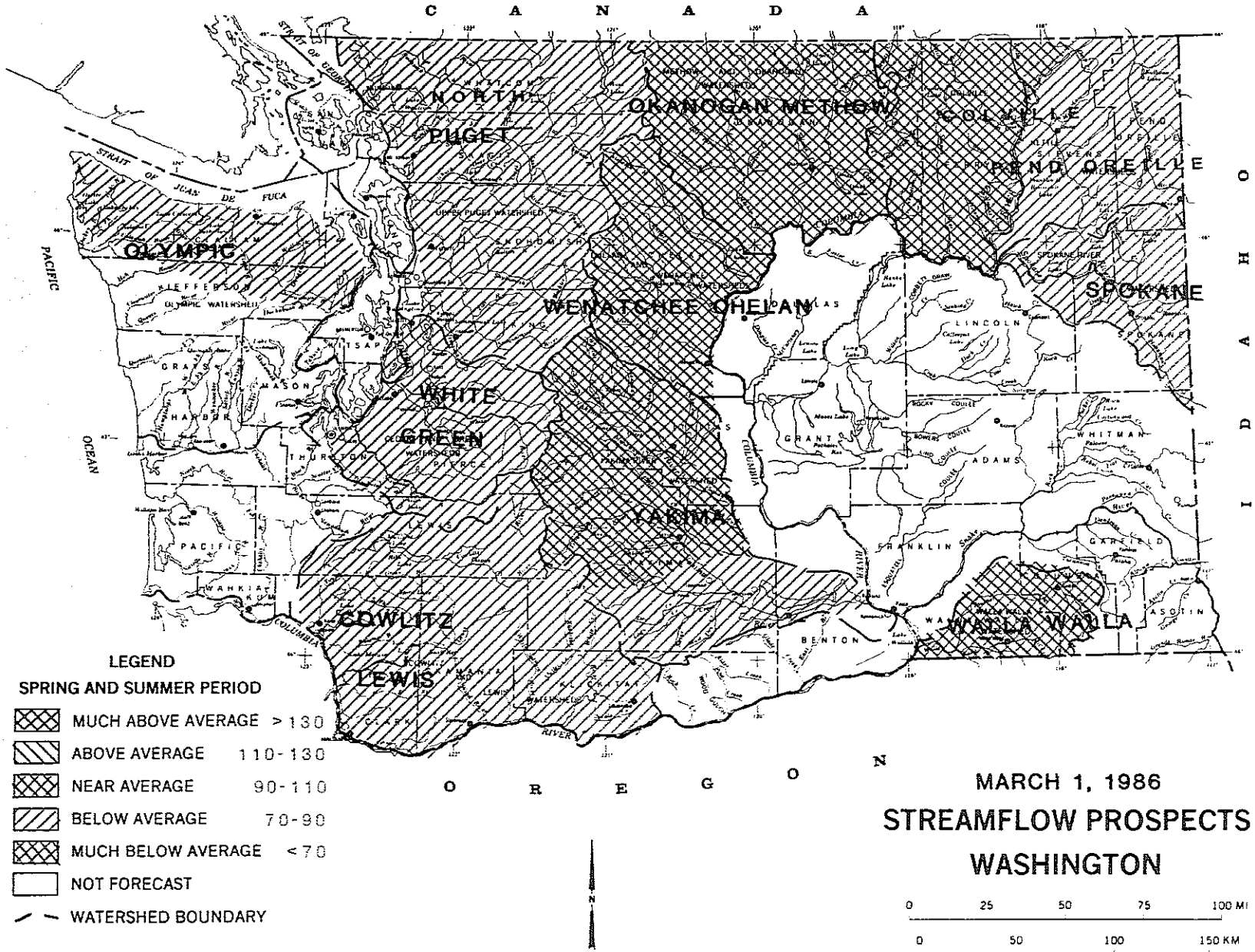
U.S. DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE



MARCH 1, 1986

STREAMFLOW PROSPECTS
WASHINGTON

SOURCE: Data compiled by SCS Field Personnel

JANUARY 1986 4-R 39641

BASE 4-R 39260

GENERAL OUTLOOK

SUMMARY:

The snowpack for March 1 is below average except for parts of Wenatchee, Chelan and the Walla Walla drainages. February precipitation was above average. Spring like temperatures were felt statewide during February. The above normal precipitation and near normal temperature had streamflow at or above normal statewide. Reservoir storage showed some improvement statewide. Forecasted stream flows are slightly improved over February.

SNOWPACK:

March 1 snowpack was varied over Washington with a high of 125% on the Stemilt Creek drainage, and a low of 43% of normal on the Cedar River. The Yakima Basin snowpack is at 87% of average, while the Spokane, Okanogan and Pend Oreille Basins are near 80%. Snowpack around Mt. St. Helens is near 77% of normal. The Puget Sound rivers of the Elwah, Snoqualmie and Baker are below 70% of average.

PRECIPITATION:

February precipitation was above average for all the basins in the state. Highest was the Walla Walla Basin where 292% of normal fell during the month. The Walla Walla weather station reported 4.12 inches compared to the February average of 1.41. The Wenatchee Basin had 180% of normal precipitation. The lowest was the Olympic Basin where precipitation was 115% of average. Other basin readings were; Spokane 129%, Okanogan 152% Yakima 134%, Cowlitz-Lewis 127% and the North Puget Sound 128%.

RESERVOIRS:

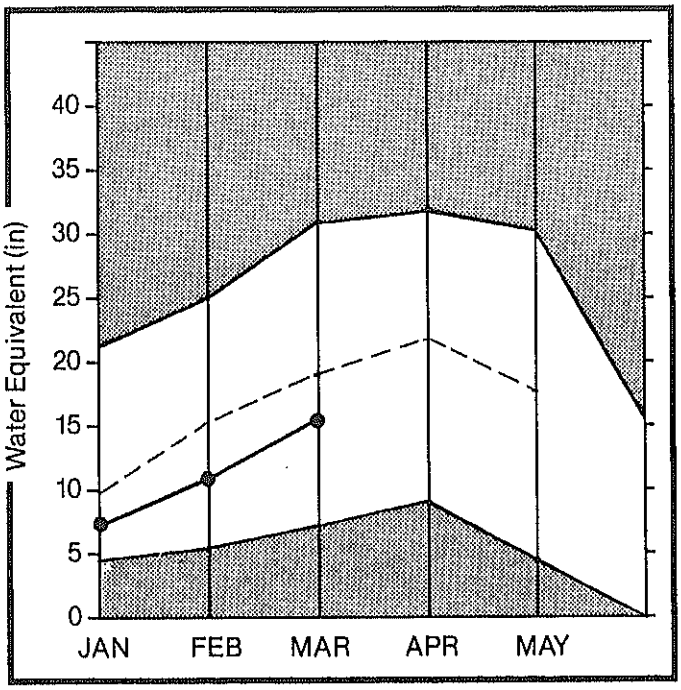
Reservoir storage improved during February, with the Puget Sound reservoirs at 97% of normal and Chelan Lake at 101% of average. The Yakima reservoirs remain below normal at 80%, storing 555,200 acre feet compared to the average of 697,000 acre feet. The Okanogan reservois are at 104% of normal.

STREAMFLOW

February streamflow was above normal over most of Washington. Above normal precipitation coupled with above average temperatures allowed much of the low elevation snow to melt. Some February streamflows around the state were; Spokane 102%, Columbia @ the International Boundary 107%, Chelan 114%, Wenatchee 126%, Yakima 96%, Walla Walla 193%, Cowlitz 136% and the Skykomish 159%. Forecasted streamflows for the coming summer are for near average on the eastern side and for below average for western Washington.

SPOKANE

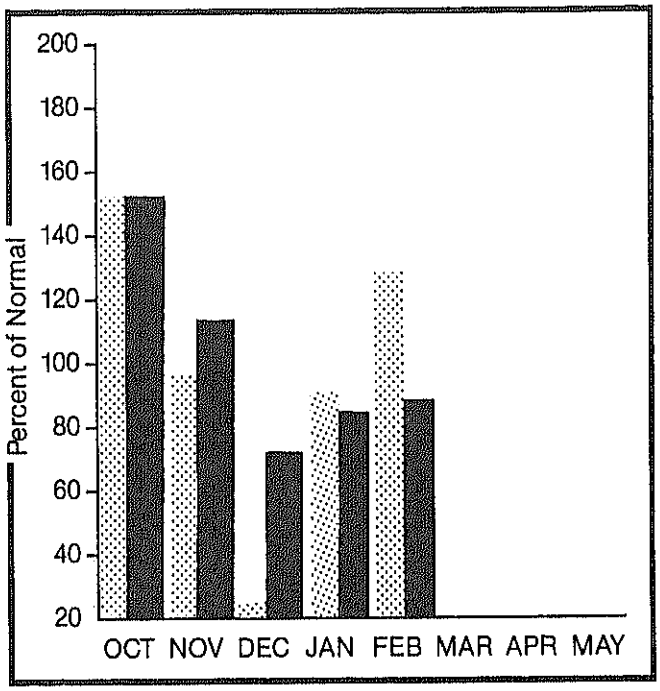
Mountain snowpack* (inches)



*Based on selected stations

Maximum
Minimum
Average
Current

Precipitation* (percent of normal)



*Based on selected stations

Monthly precipitation
Year to date precipitation

SPOKANE RIVER BASIN

WATER SUPPLY OUTLOOK:

Snowcover in the Spokane Drainage is 81% of normal for the March 1st measurements. This is up from the 69% for February. February Precipitation was 129% of average, bringing the water year total to 87%. Streamflows are forecasted to be 70% of normal for the summer. Above average precipitation and normal temperatures combined to bring melt to the low elevation snowpack. Streamflow in the Spokane River was 102% of normal at Post Falls. Storage in Coeur d' Alene Lake increased to 129% of normal.

For more information contact your local Soil Conservation Service office.

SPOKANE RIVER BASIN

STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	20 YR. AVE. (1000AF)	MOST PROBABLE (1000AF)	MOST PROBABLE (% AVE.)	REAS. MAX. (% AVE.)	REAS. MIN. (% AVE.)	PEAK FLOW (CFS)	PEAK DATE	LOW FLOW (CFS)	LOW DATE
SPOKANE at Post Falls	APR-SEP	2848.0	2000.0	70	103	97				
	APR-JUL	2754.0	1930.0	70	103	97				

RESERVOIR STORAGE (1000AF)

RESERVOIR	USEABLE CAPACITY	xx USEABLE STORAGE xx THIS YEAR	LAST YEAR	AVE.
COEUR D'ALENE	225.1	209.0	17.5	142.0

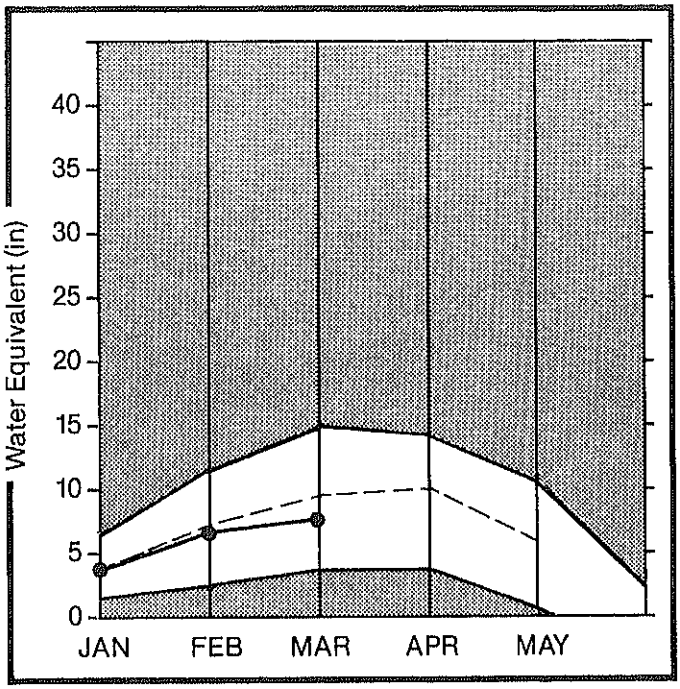
WATERSHED SNOWPACK ANALYSIS

WATERSHED	NO. COURSES AVE.D	THIS YEAR AS % OF LAST YR.	AVERAGE
Spokane River	17	65	76

*Corrected for upstream diversions or changes in reservoir storage.
Average is for 1961-80 period.

COLVILLE AND PEND OREILLE

Mountain snowpack* (inches)



*Based on selected stations

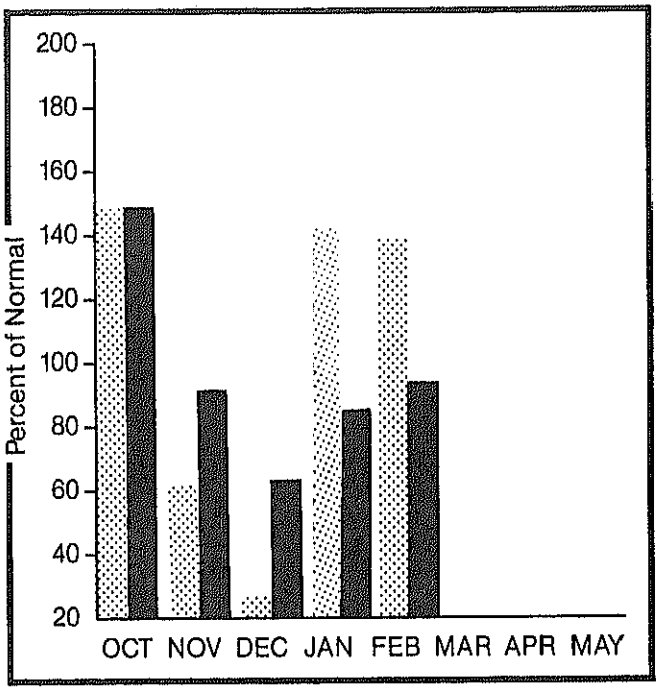
Maximum

Minimum

Average

Current

Precipitation* (percent of normal)



*Based on selected stations

Monthly precipitation

Year to date precipitation

COLVILLE - PEND OREILLE RIVER BASINS

WATER SUPPLY OUTLOOK:

Snowcover improved on the Pend Oreille River from 70% to 78% of normal, but reduced in the Kettle from 95% to 84% and Colville from 85% to 78%. February precipitation was 139% of normal. Streamflows were 114% of average in the Pend Oreille and 134% in the Kettle River. Forecasted streamflows are for 82% in the Pend Oreill, 90% in the Kettle and 80% in the Colville. Streamflows in the Columbia River were at 107% of normal for February and are forecasted to be 93% for the spring and summer.

For more information contact your local Soil Conservation Service office.

COLVILLE - PEND OREILLE RIVER BASINS

STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	20 YR. AVE. (1000AF)	MOST PROBABLE (1000AF)	MOST PROBABLE (% AVE.)	REAS. MAX. (% AVE.)	REAS. MIN. (% AVE.)	PEAK FLOW (CFS)	PEAK DATE	LOW FLOW (CFS)	LOW DATE
PEND OREILLE RIVER bl Box Canyon	APR-SEP	15425.0	12600.0	81	101	63				
	APR-JUL	14156.0	11600.0	81	101	63				
	APR-JUN	12227.0	10100.0	82	102	64				
COLVILLE RIVER at Kettle Falls	APR-SEP	134.0	107.0	79	129	31				
	APR-JUL	123.0	100.0	81	130	33				
	APR-JUN	114.0	93.5	82	131	33				
KETTLE RIVER nr Laurier	APR-SEP	1829.0	1650.0	90	122	58				
	APR-JUL	1738.0	1560.0	89	122	58				
	APR-JUN	1581.0	1440.0	91	123	59				
COLUMBIA RIVER at Birchbank *	APR-SEP	44605.0	44300.0	99	118	80				
	APR-JUL	35705.0	35500.0	99	118	80				
	APR-JUN	26027.0	25770.0	99	118	80				
COLUMBIA RIVER at Grand Coulee *	APR-SEP	66841.0	62200.0	93	106	80				
	APR-JUL	56169.0	52300.0	93	106	80				
	APR-JUN	44036.0	41000.0	93	106	80				

RESERVOIR STORAGE (1000AF)

RESERVOIR	USEABLE CAPACITY	** USEABLE STORAGE ** THIS YEAR	LAST YEAR	AVE.
ROOSEVELT	5232.0	4860.7	2694.0	2763.0
BANKS	715.0	741.4	674.8	606.0

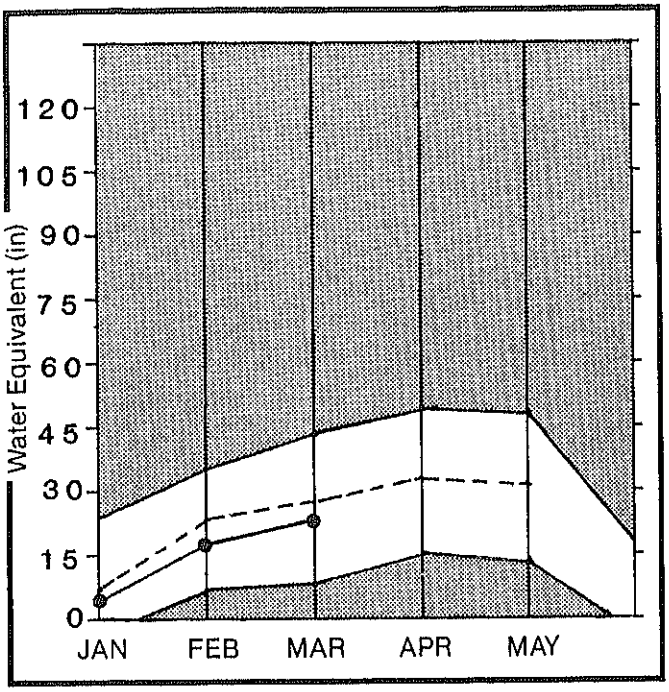
WATERSHED SNOWPACK ANALYSIS

WATERSHED	NO. COURSES AVE.D	THIS YEAR AS % OF LAST YR.	THIS YEAR AS % OF AVERAGE
Colville River	3	78	78
Pend Oreille River	12	75	79
Kettle River	9	102	83
Omac Lake, Twin Lakes	0	0	0
Newman Lake	0	0	0

*Corrected for upstream diversions or changes in reservoir storage.
Average is for 1961-80 period.

OKANOGAN AND METHOW

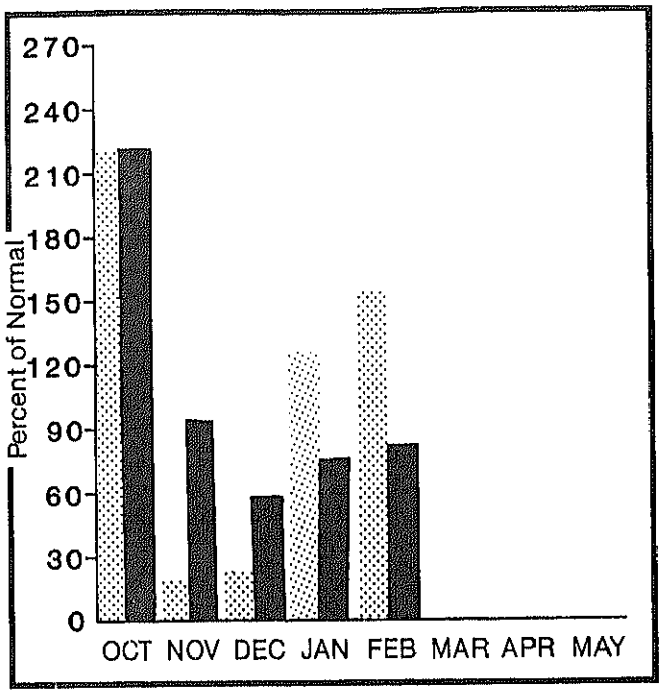
Mountain snowpack* (inches)



*Based on selected stations

Maximum
Minimum
Average
Current

Precipitation* (percent of normal)



*Based on selected stations

Monthly precipitation
Year to date precipitation

OKANOGAN - METHOW RIVER BASINS

WATER SUPPLY OUTLOOK:

Precipitation in the Okanogan-Methow Basins was 152% of normal during February. Temperatures averaged degree above normal for the month. Snowcover was 83% of average on the Okanogan and 79% on the Methow River drainages. Reservoir storage is at 104% of the 20 year average, with 14,500 acre feet in storage. Forecasted streamflow for the Okanogan is 95% and on the Methow is 96% of normal.

For more information contact your local Soil Conservation Service office.

OKANOGAN - METHOW RIVER BASINS

STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	20 YR. AVE. (1000AF)	MOST PROBABLE (1000AF)	MOST PROBABLE (% AVE.)	REAS. MAX. (% AVE.)	REAS. MIN. (% AVE.)	PEAK FLOW (CFS)	PEAK DATE	LOW FLOW (CFS)	LOW DATE
SIMILKAMEEN R. nr Nighthawk	APR-SEP	1462.0	1400.0	95	126	66				
	APR-JUL	1365.0	1310.0	95	126	66				
	APR-JUN	1161.0	1130.0	97	127	67				
OKANOGAN R. nr Tonasket	APR-SEP	1644.0	1560.0	94	129	61				
	APR-JUL	1497.0	1420.0	94	129	61				
	APR-JUN	1262.0	1210.0	95	130	62				
METHOW RIVER nr Pateros	APR-SEP	980.0	936.0	95	126	66				
	APR-JUL	908.0	865.0	95	125	65				
	APR-JUN	773.0	745.0	96	126	66				

RESERVOIR STORAGE (1000AF)

RESERVOIR	USEABLE CAPACITY	** USEABLE STORAGE ** THIS YEAR	LAST YEAR	AVE.

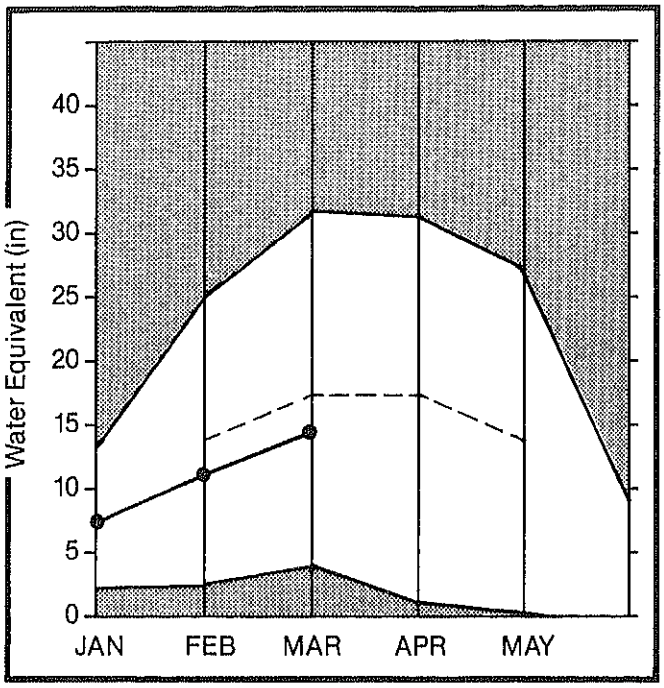
WATERSHED SNOWPACK ANALYSIS

WATERSHED	NO. COURSES AVE.D	THIS YEAR AS % OF LAST YR.	AVERAGE
Okanogan River	28	91	84
Methow River	4	92	83

*Corrected for upstream diversions or changes in reservoir storage.
Average is for 1961-80 period.

WENATCHEE AND CHELAN

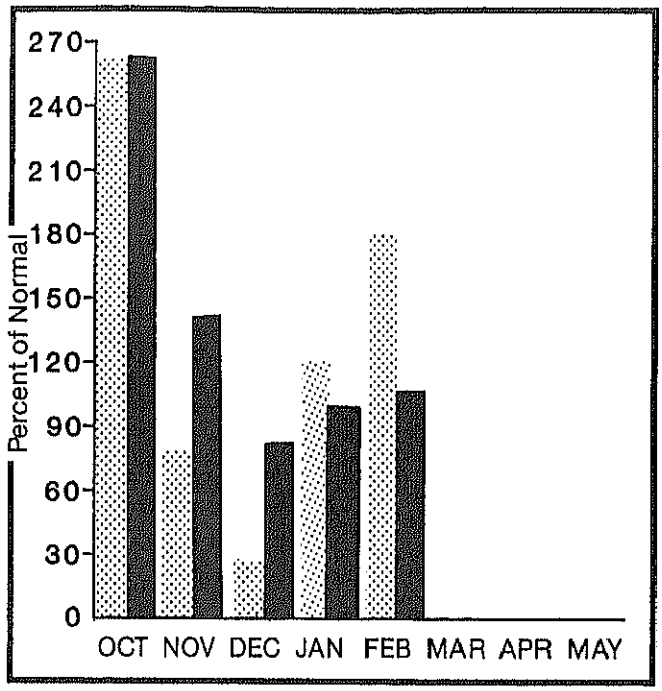
Mountain snowpack* (inches)



*Based on selected stations

Maximum
Minimum
Average
Current

Precipitation* (percent of normal)



*Based on selected stations

Monthly precipitation
Year to date precipitation

WENATCHEE - CHELAN RIVER BASINS

WATER SUPPLY OUTLOOK:

Snowcover remained near the season norm with 103% in the Chelan, 96% in the Entiat and 91% for the Wenatchee Basin. Precipitation for February was 180% of normal, with Lake Wenatchee reporting 8.1 inches compared to an average of 3.38. February streamflow was above average with the Wenatchee at 126% and the Chelan at 114%. Storage in Chelan Lake was at 101% of the March 1st normal. Forecasted streamflow for the spring and summer are Chelan 98%, Entiat 95%, Wenatchee 95% and the Stemilt 95%.

For more information contact your local Soil Conservation Service office.

WENATCHEE – CHELAN RIVER BASINS

STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	20 YR. AVE. (1000AF)	MOST PROBABLE (1000AF)	MOST PROBABLE (% AVE.)	REAS. MAX. (% AVE.)	REAS. MIN. (% AVE.)	PEAK FLOW (CFS)	PEAK DATE	LOW FLOW (CFS)	LOW DATE
CHELAN RIVER at Chelan *	APR-SEP	1203.0	1180.0	98	117	79				
	APR-JUL	1055.0	1030.0	97	117	79				
	APR-JUN	826.0	810.0	98	112	79				
STEHEKIN R. at Stehekin	APR-SEP	860.0	860.0	100	119	87				
	APR-JUL	727.0	727.0	100	119	87				
	APR-JUN	553.0	560.0	101	114	98				
ENTIAT RIVER nr Ardenvoir	APR-SEP	234.6	222.0	94						
	APR-JUL	213.0	202.0	94						
	APR-JUN	172.0	165.0	95						
WENATCHEE RIVER at Plain	APR-SEP	1270.0	1240.0	97	130	66				
	APR-JUL	1113.0	1090.0	97	130	66				
	APR-JUN	899.0	890.0	99	131	67				
STEMILT nr Wenatchee (miners in)	MAY-SEP	138.0	132.0	95						
ICICLE CREEK nr Leavenworth	APR-SEP	370.0	350.0	94						
	APR-JUL	340.0	325.0	95						
	APR-JUN	270.0	262.0	97						
COLUMBIA R. bl Rock Island Dam *	APR-SEP	72781.0	68800.0	94	110	80				
	APR-JUL	61601.0	58300.0	94	110	80				
	APR-JUN	48384.0	45900.0	94	110	80				

RESERVOIR STORAGE (1000AF)

RESERVOIR	USEABLE CAPACITY	** USEABLE STORAGE ** THIS YEAR	LAST YEAR	AVE.
CHELAN LAKE	676.1	239.0	189.9	---

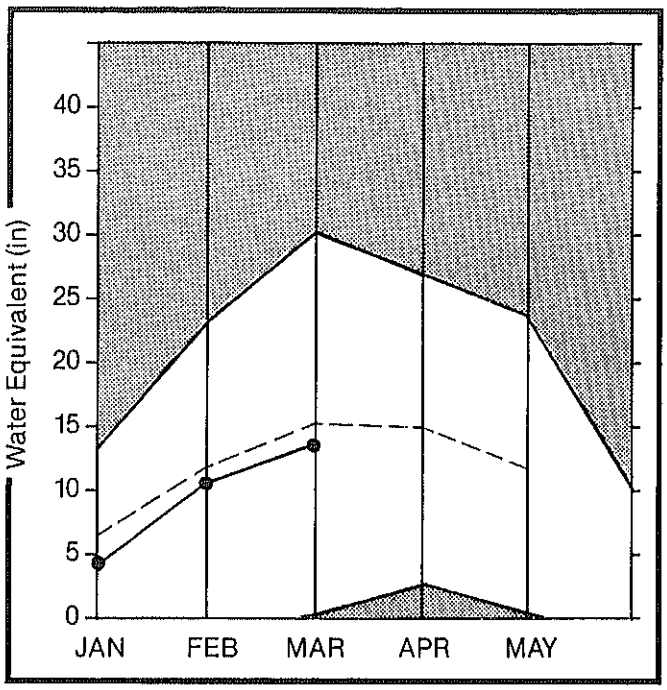
WATERSHED SNOWPACK ANALYSIS

WATERSHED	NO. COURSES AVE.D	THIS YEAR AS % OF LAST YR.	AVERAGE
Chelan Lake Basin	6	125	96
Entiat River	2	120	97
Wenatchee River	7	98	92
Colockum Creek	1	89	76
Squilchuck Creek	1	141	108
Stemilt Creek	1	120	93

*Corrected for upstream diversions or changes in reservoir storage.
Average is for 1961-80 period.

YAKIMA

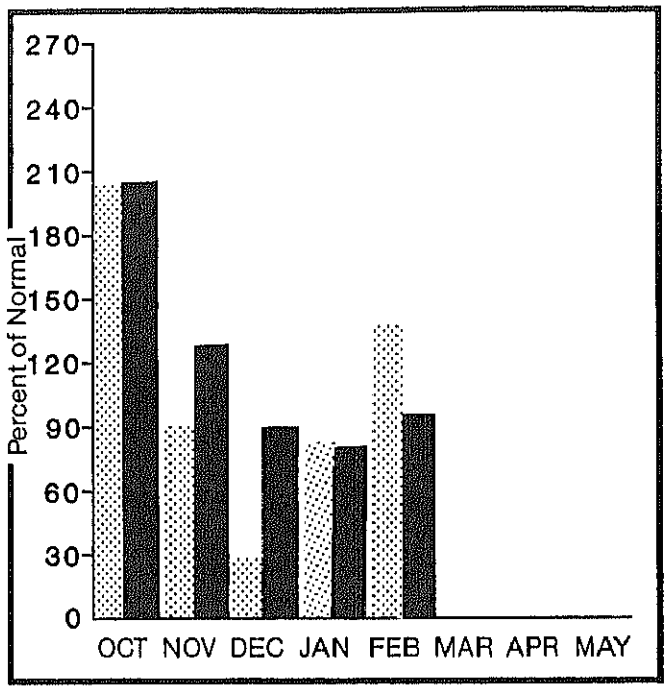
Mountain snowpack* (inches)



*Based on selected stations

Maximum
Minimum
Average
Current

Precipitation* (percent of normal)



*Based on selected stations

Monthly precipitation
Year to date precipitation

YAKIMA RIVER BASIN

WATER SUPPLY OUTLOOK:

Snowcover remained constant with 87% of average over the Yakima Basin. Streamflows are forecasted to be 91% on the Yakima and 95% on the Naches River. Precipitation for February was 134% of normal, with late month precipitation falling as rain. Reservoir storage is 80% of the 20 year average, with 560,000 acre feet in storage. Temperatures averaged 1 degree below average, with the last two weeks being above normal. Streamflow in the Yakima for February was 96% of average.

For more information contact your local Soil Conservation Service office.

YAKIMA RIVER BASIN

STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	20 YR. AVE. (1000AF)	MOST PROBABLE (1000AF)	MOST PROBABLE (% AVE.)	REAS. MAX. (% AVE.)	REAS. MIN. (% AVE.)	PEAK FLOW (CFS)	PEAK DATE	LOW FLOW (CFS)	LOW DATE
YAKIMA RIVER at Martin *	APR-SEP	139.0	126.0	90	102	79				
	APR-JUL	128.0	116.0	90	102	79				
	APR-JUN	111.0	102.0	91	103	80				
YAKIMA RIVER at Cle Elum *	APR-SEP	943.0	849.0	90	101	79				
	APR-JUL	854.0	770.0	90	101	79				
	APR-JUN	734.0	670.0	91	102	80				
YAKIMA RIVER nr Parker *	APR-SEP	2096.0	1940.0	92	112	74				
	APR-JUL	1898.0	1760.0	92	112	74				
	APR-JUN	1667.0	1570.0	94	113	75				
KACHESS RIVER nr Easton *	APR-SEP	121.0	109.0	90	102	79				
	APR-JUL	115.0	104.0	90	102	79				
	APR-JUN	101.0	92.0	91	103	80				
CLE ELUM RIVER nr Roslyn *	APR-SEP	463.0	426.0	92	103	91				
	APR-JUL	422.0	390.0	92	103	81				
	APR-JUN	353.0	330.0	93	104	86				
BUMPING RIVER nr Nile *	APR-SEP	142.0	135.0	95	114	74				
	APR-JUL	129.0	123.0	95	114	74				
	APR-JUN	107.0	103.0	96	117	76				
AMERICAN RIVER nr Nile	APR-SEP	124.0	118.0	95	114	74				
	APR-JUL	113.0	107.0	94	114	73				
	APR-JUN	94.0	90.0	95	117	74				
TIETON RIVER at Tieton *	APR-SEP	246.0	237.0	96	117	75				
	APR-JUL	207.0	198.0	95	117	75				
	APR-JUN	165.0	160.0	96	118	76				
NACHES RIVER nr Naches *	APR-SEP	867.0	823.0	94	118	72				
	APR-JUL	784.0	744.0	94	118	72				
	APR-JUN	667.0	640.0	95	117	73				
AHTANUM CREEK nr Tampico *	APR-SEP	47.0	38.0	80	119	43				
	APR-JUL	43.0	34.8	80	119	42				
	APR-JUN	37.0	30.3	81	119	43				

RESERVOIR STORAGE (1000AF)

RESERVOIR	USEABLE CAPACITY	** USEABLE STORAGE ** THIS YEAR	LAST YEAR	AVE.
KEECHELUS	157.8	[illegible]	[illegible]	[illegible]
KACHESS	239.0	[illegible]	[illegible]	[illegible]
CLE ELEM	436.9	[illegible]	[illegible]	[illegible]
BUMPING LAKE	33.7	[illegible]	[illegible]	[illegible]
RIMROCK	198.0	[illegible]	[illegible]	[illegible]

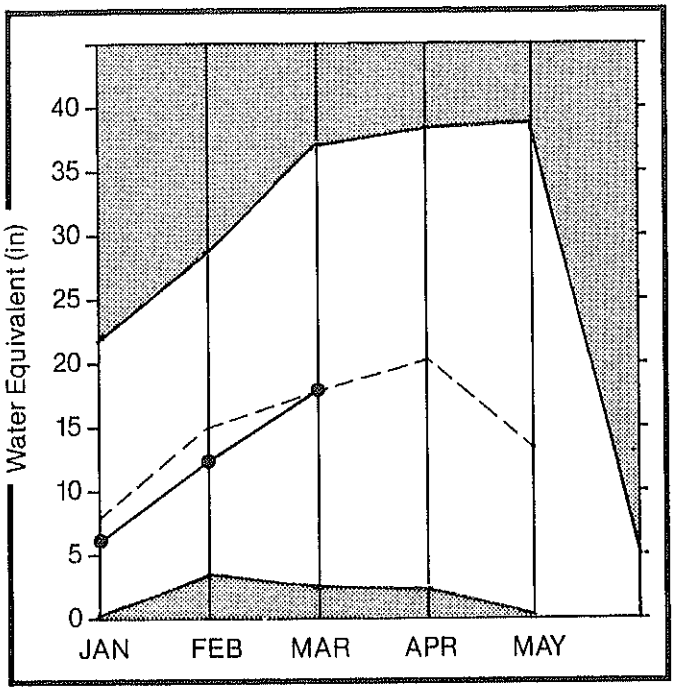
WATERSHED SNOWPACK ANALYSIS

WATERSHED	NO. COURSES AVE.D	THIS YEAR AS % OF LAST YR.	THIS YEAR AS % OF AVERAGE
Yakima River	15	107	86
Ahtanum Creek	2	139	71

*Corrected for upstream diversions or changes in reservoir storage.
Average is for 1961-80 period.

WALLA WALLA

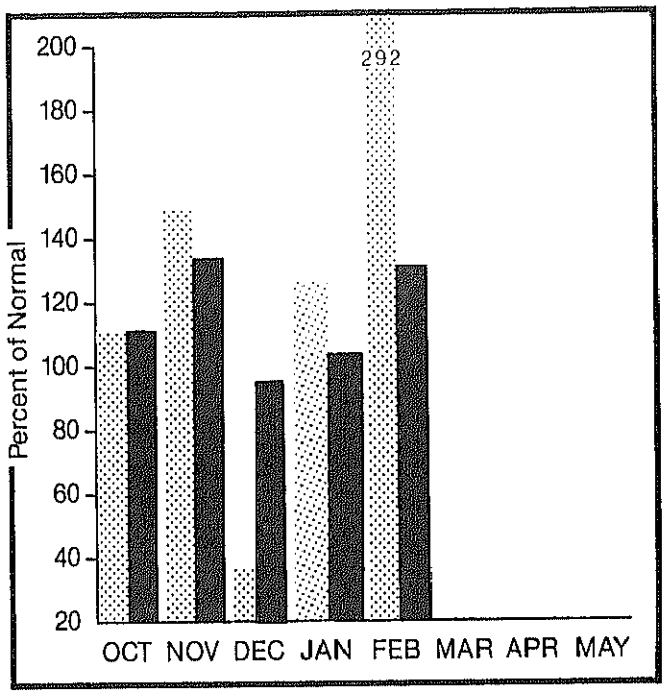
Mountain snowpack* (inches)



*Based on selected stations

Maximum
Minimum
Average
Current

Precipitation* (percent of normal)



*Based on selected stations

Monthly precipitation
Year to date precipitation

WALLA WALLA RIVER BASIN

WATER SUPPLY OUTLOOK:

Streamflow in the Walla Walla River was 193% of normal for February. Precipitation for February was 292% of average. with temperatures normal for the month. Temperatures were above average for the last two weeks of February and along with the high precipitation caused much of the low elevation snow to melt. Streamflows are forecasted to be near normal with the Walla Walla River at 96% for the summer.

For more information contact your local Soil Conservation Service office.

WALLA WALLA RIVER BASIN

STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	30 YR. AVE. (1000AF)	MOST PROBABLE (1000AF)	MOST PROBABLE (% AVE.)	REAS. MAX. (% AVE.)	REAS. MIN. (% AVE.)	PEAK FLOW (CFS)	PEAK DATE	LOW FLOW (CFS)	LOW DATE
MILL CREEK at Walla Walla	APR-SEP	17.5	16.8	96	126	69				
	APR-JUL	17.3	16.6	95	127	69				
	APR-JUN	17.1	16.5	96	122	70				
COLUMBIA R. at The Dalles *	APR-SEP	101000.0	95000.0	94	111	77				
	APR-JUL	86500.0	81100.0	93	111	77				
	APR-JUN	70100.0	65900.0	94	111	77				

RESERVOIR STORAGE (1000AF)

RESERVOIR	USEABLE CAPACITY	xx USEABLE STORAGE xx THIS YEAR	LAST YEAR	AVE.

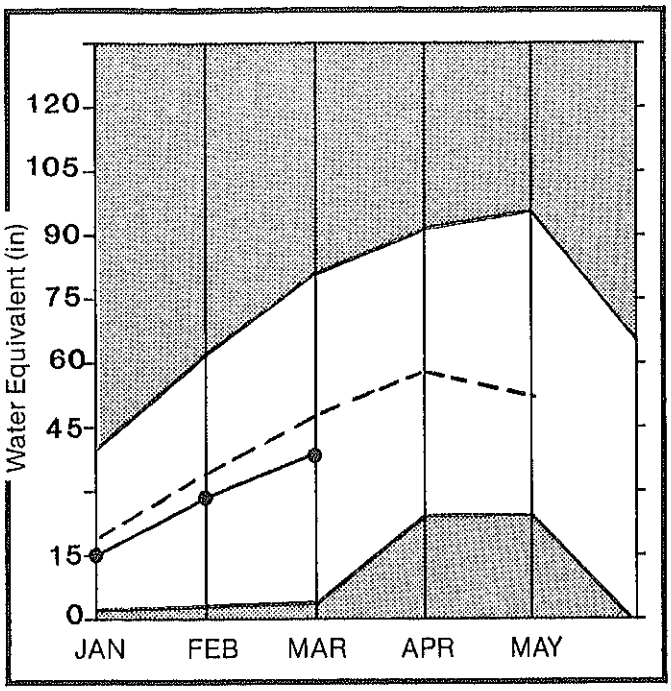
WATERSHED SNOWPACK ANALYSIS

WATERSHED	NO. COURSES AVE.D	THIS YEAR AS % OF LAST YR.	AVERAGE
Mill Creek	1	58	102

*Corrected for upstream diversions or changes in reservoir storage.
Average is for 1961-80 period.

COWLITZ AND LEWIS

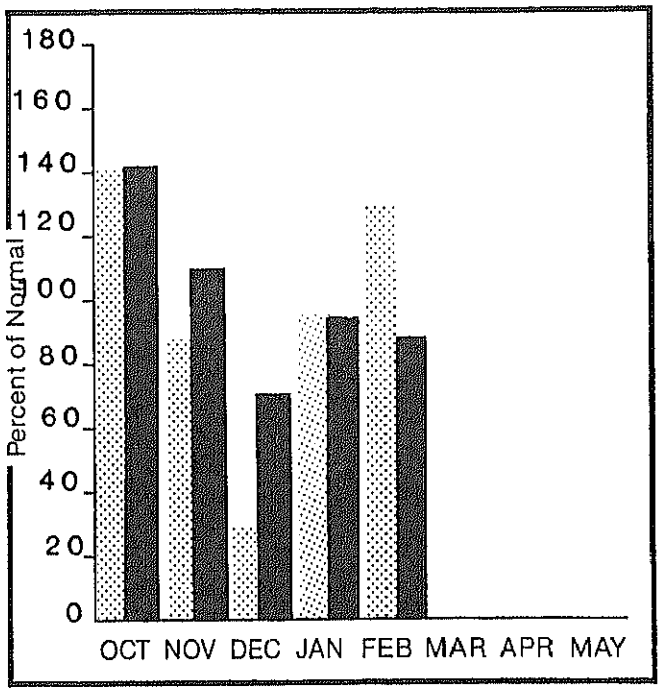
Mountain snowpack* (inches)



*Based on selected stations

Maximum
Minimum
Average
Current

Precipitation* (percent of normal)



*Based on selected stations

Monthly precipitation
Year to date precipitation

COWLITZ - LEWIS RIVER BASINS

WATER SUPPLY OUTLOOK:

Streamflows are forecasted to be 85% on the Cowlitz River and 84% on the Lewis River this summer. February streamflow on the Cowlitz River was 136% of normal. Snowcover for the March 1st snow measurements were at 77% of normal down from the 94% of normal for February 1. Precipitation for February was 127% of average, with much of it falling as rain. Temperatures for the month were near normal.

For more information contact your local Soil Conservation Service office.

COWLITZ - LEWIS RIVER BASINS

STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	20 YR. AVE. (1000AF)	MOST PROBABLE (1000AF)	MOST PROBABLE (% AVE.)	REAS. MAX. (% AVE.)	REAS. MIN. (% AVE.)	PEAK FLOW (CFS)	PEAK DATE	LOW FLOW (CFS)	LOW DATE
LEWIS RIVER at Ariel x	APR-SEP	1249.0	1050.0	84	114	68				
	APR-JUL	1086.0	912.0	84	114	64				
	APR-JUN	961.0	820.0	85	115	69				
COWLITZ R. bl Mayfield Dam x	APR-SEP	2038.0	1670.0	82	120	68				
	APR-JUL	1778.0	1460.0	82	120	67				
	APR-JUN	1502.0	1250.0	83	121	71				
COWLITZ R. at Castle Rock x	APR-SEP	2673.0	2270.0	85	120	69				
	APR-JUL	2323.0	1975.0	85	120	69				
	APR-JUN	1980.0	1710.0	86	121	71				

RESERVOIR STORAGE (1000AF)

RESERVOIR	USEABLE CAPACITY	xx USEABLE STORAGE xx THIS YEAR	LAST YEAR	AVE.

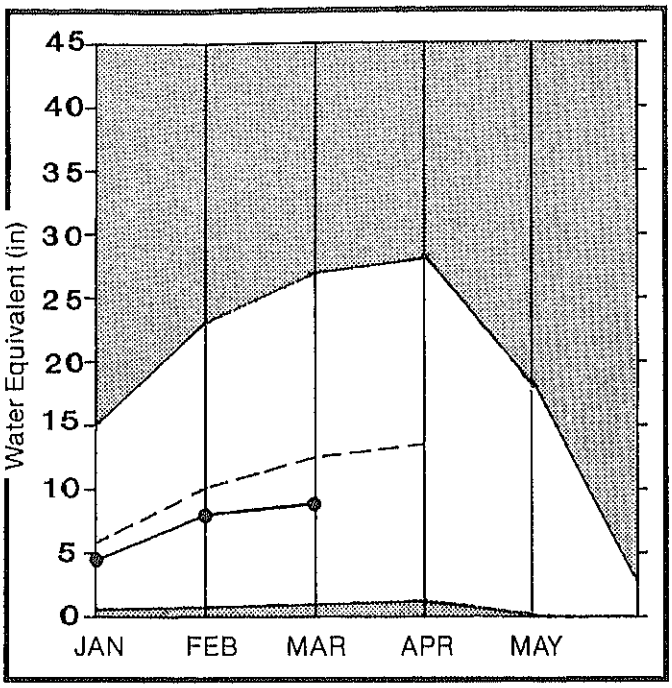
WATERSHED SNOWPACK ANALYSIS

WATERSHED	NO. COURSES AVE.D	THIS YEAR AS % OF LAST YR.	AVERAGE
Cowlitz River	2	105	74
Lewis River	2	82	90

xCorrected for upstream diversions or changes in reservoir storage.
Average is for 1961-80 period.

WHITE - GREEN

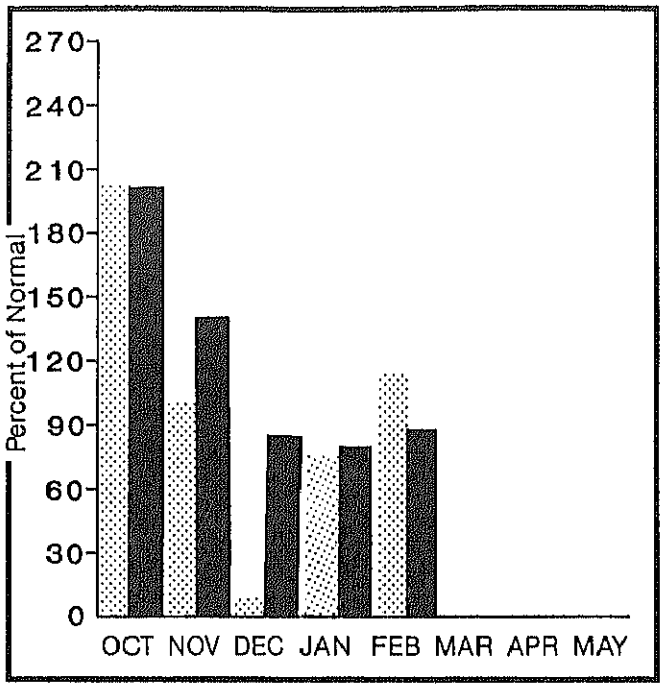
Mountain snowpack* (inches)



*Based on selected stations

Maximum
Minimum
Average
Current

Precipitation* (percent of normal)



*Based on selected stations

Monthly precipitation
Year to date precipitation

WHITE - GREEN RIVER BASINS

WATER SUPPLY OUTLOOK:

Snowcover continued to be below average in the Green and Cedar Rivers with 66% and 43% of normal. The White River is only slightly better with 85% of average. Streamflows were above average for February and the forecasted streamflows are 80% for the Green River and 83% for the Cedar River. Precipitation for February was 116% of normal, with temperatures near average for the month.

For more information contact your local Soil Conservation Service office.

WHITE - GREEN RIVER BASINS

STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	20 YR. AVE. (1000AF)	MOST PROBABLE (1000AF)	MOST PROBABLE (% AVE.)	REAS. MAX. (% AVE.)	REAS. MIN. (% AVE.)	PEAK FLOW (CFS)	PEAK DATE	LOW FLOW (CFS)	LOW DATE
GREEN RIVER bl Howard Hanson Dam x	APR-SEP	316.0	255.0	80						
	APR-JUL	284.0	230.0	81						
	APR-JUN	256.0	210.0	82						
CEDAR RIVER nr Cedar Falls	APR-SEP	93.0	77.0	82						

RESERVOIR STORAGE (1000AF)

RESERVOIR	USEABLE CAPACITY	xx USEABLE STORAGE xx THIS YEAR	LAST YEAR	AVE.

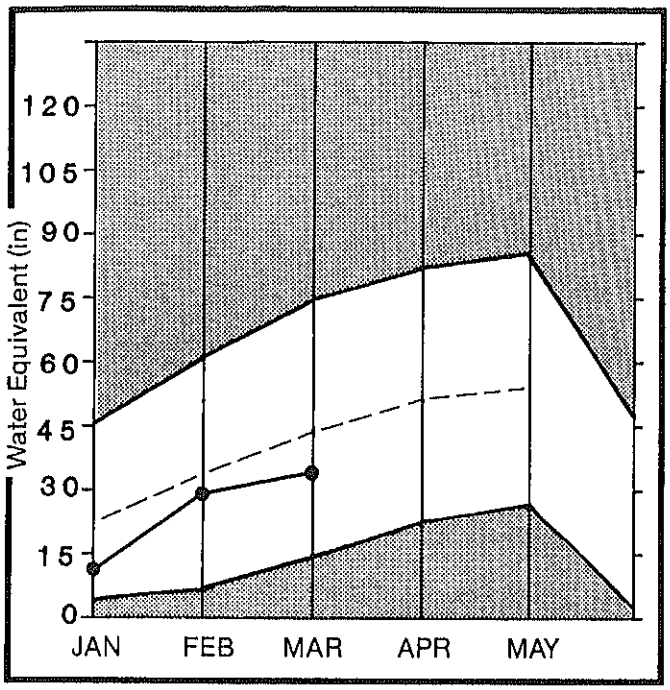
WATERSHED SNOWPACK ANALYSIS

WATERSHED	NO. COURSES AVE.D	THIS YEAR AS % OF LAST YR.	AVERAGE
White River	2	112	77
Green River	9	47	64

xCorrected for upstream diversions or changes in reservoir storage.
Average is for 1961-80 period.

NORTH PUGET SOUND

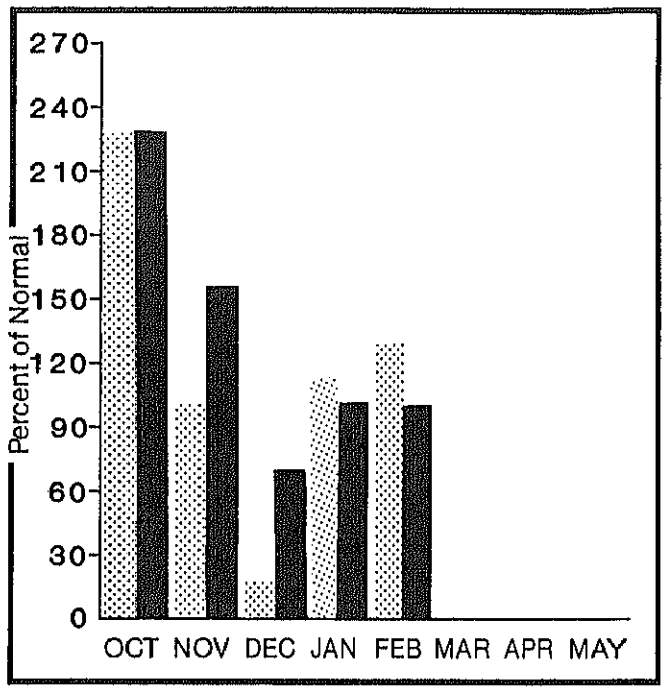
Mountain snowpack* (inches)



*Based on selected stations

Maximum
Minimum
Average
Current

Precipitation* (percent of normal)



*Based on selected stations

Monthly precipitation
Year to date precipitation

NORTH PUGET SOUND RIVER BASINS

WATER SUPPLY OUTLOOK:

Snowcover remained much the same as last month with the Skagit River at 90% of average and the Baker River at 66%. Streamflows are forecasted to be 85% of average on the Skagit. February precipitation was 128% of normal for the North Puget Sound, with Diablo Dam receiving 11.87 inches for the month. Streamflow for February was 159% of average for the Skykomish River. Reservoir storage in Ross, Diablo and Gorge was at 97% of normal.

For more information contact your local Soil Conservation Service office.

NORTH PUGET SOUND RIVER BASINS

STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	20 YR. AVE. (1000AF)	MOST PROBABLE (1000AF)	MOST PROBABLE (% AVE.)	MEAS. MAX. (% AVE.)	MEAS. MIN. (% AVE.)	PEAK FLOW (CFS)	PEAK DATE	LOW FLOW (CFS)	LOW DATE
SKAGIT RIVER at Newhalem x	APR-SEP	2356.0	2000.0	84	103	67				
	APR-JUL	1972.0	1680.0	85	103	67				
	APR-JUN	1485.0	1270.0	85	104	68				

RESERVOIR STORAGE (1000AF)

RESERVOIR	USEABLE CAPACITY	xx USEABLE STORAGE xx THIS YEAR	LAST YEAR	AVE.
ROSS	1404.1	869.2	484.3	---
DIABLO RESERVOIR	90.6	85.6	86.9	---
GORGE RESERVOIR	9.8	7.4	7.9	---

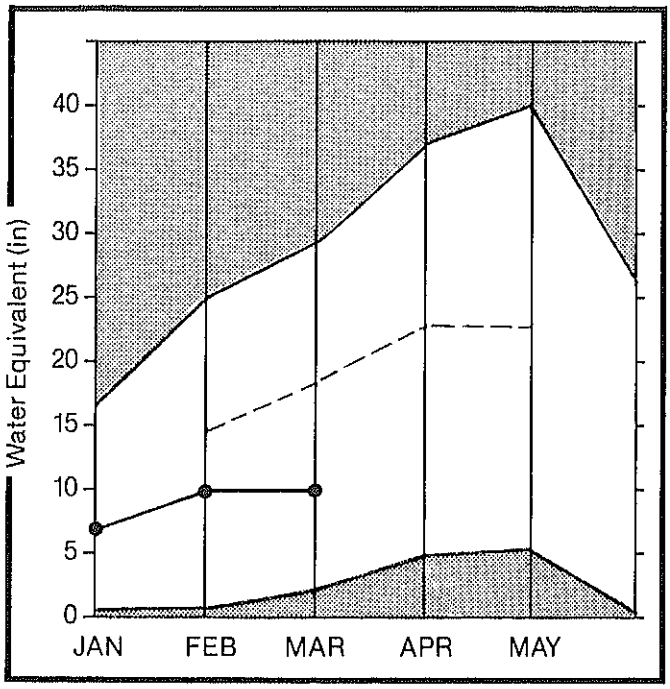
WATERSHED SNOWPACK ANALYSIS

WATERSHED	NO. COURSES AVE.D	THIS YEAR AS % OF LAST YR.	AVERAGE
Skagit River	14	101	91
Baker River	9	64	63
Cedar River	2	32	43
Snoqualmie River	1	89	82
Skykomish River	2	74	72

xCorrected for upstream diversions or changes in reservoir storage.
Average is for 1961-80 period.

OLYMPIC

Mountain snowpack* (inches)



*Based on selected stations

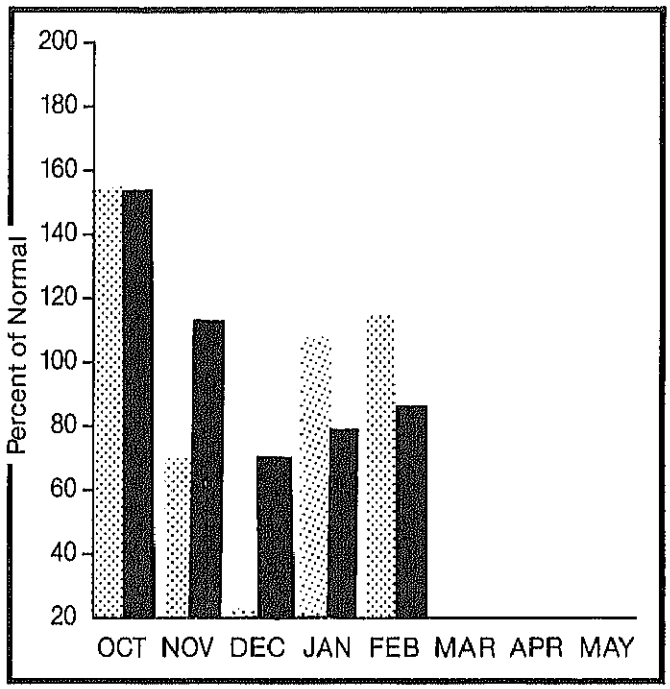
Maximum

Minimum

Average

Current

Precipitation* (percent of normal)



*Based on selected stations

Monthly precipitation

Year to date precipitation

OLYMPIC PENINSULA RIVER BASINS

WATER SUPPLY OUTLOOK:

Snowcover in the Olympic Peninsula remained much below average, with the Elwa at 50%, the Dungeness at 64% and Morse Creek at 78%. Streamflows are forecasted to be 75% of normal for the summer. Precipitation was 115% of normal for February with the Quillayute Airport having 12.27 inches of moisture. The water year total is now 86% of normal up from 79% last month.

For more information contact your local Soil Conservation Service office.

OLYMPIC PENINSULA RIVER BASINS

STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	20 YR. AVE. (1000AF)	MOST PROBABLE (1000AF)	MOST PROBABLE (% AVE.)	REAS. MAX. (% AVE.)	REAS. MIN. (% AVE.)	PEAK FLOW (CFS)	PEAK DATE	LOW FLOW (CFS)	LOW DATE
DUNGENESS RIVER nr Sequim	APR-SEP	160.0	120.0	75	93	57				
	APR-JUL	130.0	97.5	75	93	57				
	APR-JUN	97.0	72.8	75	93	57				
ELWHA RIVER nr Port Angeles	APR-SEP	553.0	414.0	74						
	APR-JUL	454.0	340.0	74						

RESERVOIR STORAGE (1000AF)

RESERVOIR	USEABLE CAPACITY	xx USEABLE STORAGE xx THIS YEAR	LAST YEAR	AVE.

WATERSHED SNOWPACK ANALYSIS

WATERSHED	NO. COURSES AVE.D	THIS YEAR AS % OF LAST YR.	AVERAGE
Dungeness River	1	60	64
Morse Creek	1	70	79
Elwha River	1	55	50

*Corrected for upstream diversions or changes in reservoir storage.
Average is for 1961-80 period.

RESERVOIR OPERATION MANAGEMENT PROGRAM

The Soil Conservation Service can develop a Reservoir Operation and Management plan for cooperators with the Soil Conservation Districts in Washington. If you are operating a reservoir for irrigation water supply, power generation or other use this may be of some value to you.

Selecting appropriate storage and release rates for reservoirs in snowmelt runoff environments is a prerequisite to sound water management. A significant number of small impoundments, operated for single or multiple purpose use in the Western United States, lack adequate management tools to guide this process each year. A methodology has been developed and approved to use seasonal volume forecasts issued by Soil Conservation Service to improve management capability at many of these reservoirs.

The technique involves generating a family of simple rule curves for each forecast period. These curves permit operators to use predicted inflow volume to set target outflow rates that will enable them to reach a full reservoir after passage of the seasonal peak. Forecasts at three probability levels help establish the range of likely seasonal runoff events. The rule curves provide an operational tool useful for developing effective water management plans for reservoirs where forecast information is available.

Snow Survey data can be obtained by calling one of the following local SCS offices:

PULLMAN PMC

Office	(509) 335-7376
Farm	(509) 335-9689

OLYMPIA, Area I

Area Office	FTS	434-9454 or 9455
Chehalis		(206) 748-0083
Kelso		(206) 425-1880
Lake Stevens	FTS	392-9259
Lynden		(206) 354-5658
Montesano		(206) 249-5900
Mt. Vernon		(206) 424-5153
Olympia FO	FTS	434-9448
Port Angeles	FTS	396-4277
Port Orchard		(206) 876-5529
Puyallup		(206) 845-5533
Raymond		(206) 942-5945
Renton	FTS	399-3325 or 3326
Vancouver	FTS	422-7631

EPHRATA, AREA II

Area Office	FTS	446-4374 or 4375
Davenport		(509) 725-4181 or 725-1345
Ephrata FO	FTS	446-4385
Moses Lake		(509) 765-3261
Okanogan		(509) 422-2750
Othello		(509) 488-2802
Ritzville		(509) 659-0254
Waterville		(509) 745-8362
Wenatchee	FTS	390-0242 or 0260

YAKIMA, AREA III

Area Office	FTS	446-5865 or 5866
Ellensburg		(509) 925-5375
Goldendale		(509) 773-5823
Pasco		(509) 545-8546 or 8547
Prosser		(509) 786-1923
Sunnyside		(509) 837-7911
Toppenish		(509) 865-4012
Walla Walla	FTS	434-6340
White Salmon		(509) 493-1936
Yakima FO	FTS	446-5909

SPOKANE, AREA IV

Area Office	FTS	439-3726
Cheney		(509) 458-6200, Ext 2309
Clarkston		(509) 758-8012
Colfax		(509) 397-4636
Colville		(509) 684-5067
Dayton		(509) 382-2351
Fairfield		(509) 283-2331
Newport		(509) 447-4217
Pomeroy		(509) 843-1998
Republic		(509) 775-3473
Spokane FO	FTS	439-2120

SOIL SURVEY OFFICES

Bellingham		(206) 676-3520
Inchelium		(509) 722-4395
Nespelem	FTS	439-9431
Wapato		(509) 877-4004

The Following Organizations Cooperate With The Soil Conservation Service In Snow Survey Work

Canada:

Ministry of the Environment, Water Investigations Branch, Victoria, British Columbia

States:

Washington State Department of Ecology
Washington State Department of Natural Resources

Federal:

Department of the Army
  Corps of Engineers
U.S. Department of Agriculture
  Forest Service
U.S. Department of Commerce
  NOAA, National Weather Service
U.S. Department of the Interior
  Bonneville Power Administration
  Bureau of Reclamation
  Geological Survey
  National Park Service

Local:

City of Tacoma
City of Seattle
Chelan County P.U.D.
Pacific Power and Light Company
Puget Sound Power and Light Company
Washington Water Power Company
Snohomish County P.U.D.

Private:

Okanogan Irrigation District
Wenatchee Heights Irrigation District
Newman Lake Homeowners Association

Other organizations and individuals furnish valuable information for snow survey reports. Their cooperation is gratefully acknowledged.